

sec 5

~~sheet~~ Compiler

sheet 4

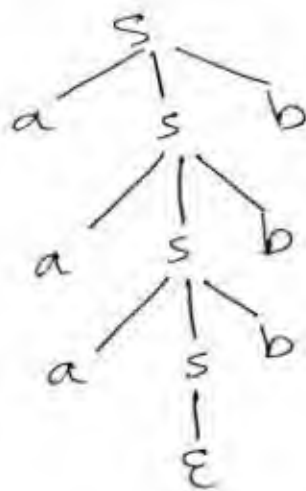
[8]

a. $a^x b^y$ $x=y$

~~sequence of a's~~

sequence of b's • seq. of a's ←

⇒ $S \rightarrow asb| \epsilon$

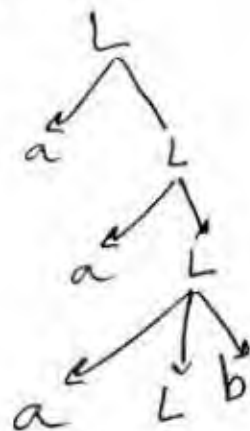
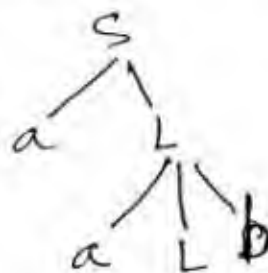


b) $a^x b^y$ $x \geq y$

↳ no. of a's more than no. of b's

$S \rightarrow aL$

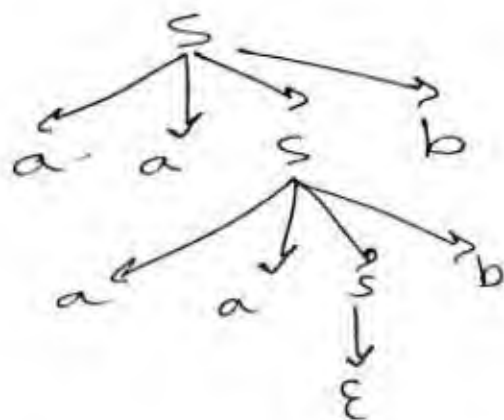
$S \rightarrow aLb| \epsilon | aL$



[1]

c) $x = 2y$

$s \rightarrow aasb | \epsilon$



d) $a^x b^y a^z$

$Z = X + Y$

$aa \not\models Z = X \not\models Y \Rightarrow$ \downarrow (no string) twice

$ba \not\models Z = Y \not\models X \Rightarrow$ \downarrow $=$ $=$ $=$

abaa

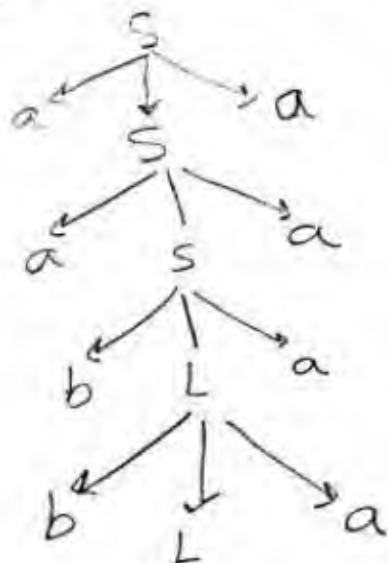
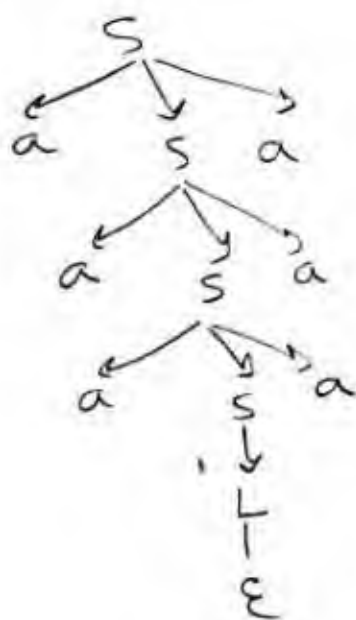
aabaaa

aabbaaaa

$s \rightarrow asa | L$

$L \rightarrow bLa | \epsilon$

\Rightarrow



$\boxed{2}$

$a^x b^y a^z$

$$Z = x - y$$

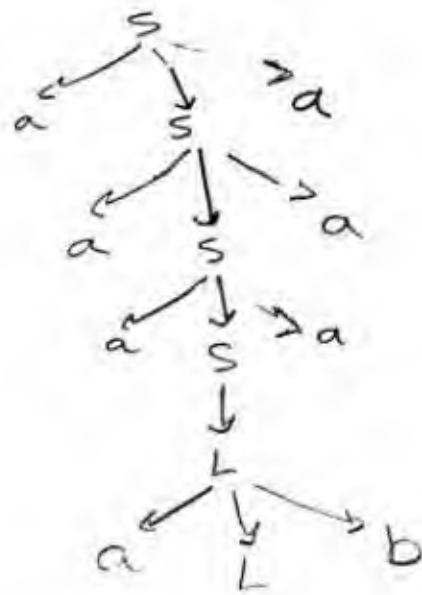
$$aa \leftarrow Z = x \leftarrow y = 0$$

$$ab \leftarrow x = y \leftarrow Z = 0$$

aaba

$$S \rightarrow aSa \mid L$$

$$L \rightarrow aLb \mid \epsilon$$



[9] a, b, c
~~stand~~

$$S \rightarrow S \text{ and } S \mid \text{true}$$

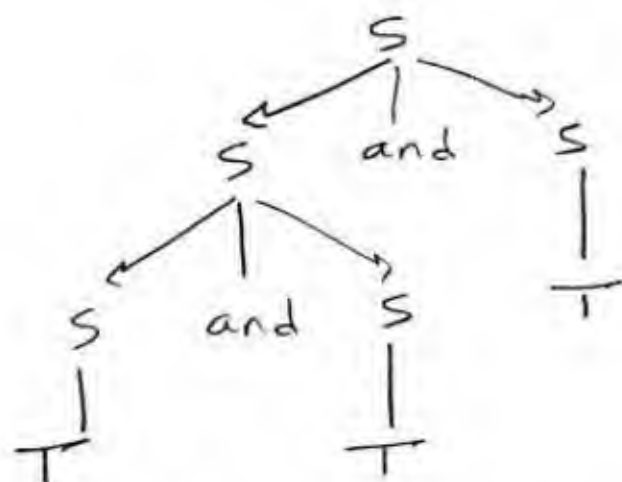
true and true and true

$$i- S \rightarrow S \text{ and } S \Rightarrow S \rightarrow S \text{ and } S \text{ and } S$$

$$\Rightarrow \text{true and } S \text{ and } S \Rightarrow \text{true and true}$$

$$\text{and } S \Rightarrow \text{true and true and true}$$

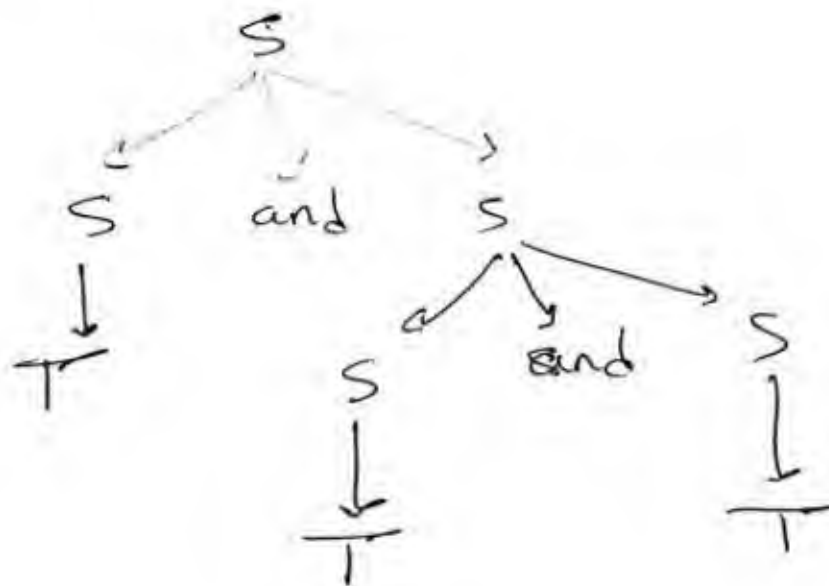
derivation. (left most)



Left
Associative

2) $S \rightarrow S \text{ and } S \Rightarrow S \rightarrow \text{true and } S$
 $\Rightarrow \text{true and } S \text{ and } S \Rightarrow \text{true and true}$
 $\text{and } S \Rightarrow \text{true and true and true}$
 $\hookrightarrow (\text{left most})$

Right
associative



3) $S \rightarrow S \text{ and } S \Rightarrow S \text{ and } \overline{T \text{ and } S} \Rightarrow$

$S \text{ and } S \text{ and } T \Rightarrow S \text{ and } \text{true and True}$
 $\Rightarrow \text{true and true and true}$

\hookrightarrow right most

4) $S \rightarrow S \text{ and } \Rightarrow S \text{ and } S \text{ and } S$

$\Rightarrow S \text{ and } S \text{ and } T \Rightarrow S \text{ and } T \text{ and } T$

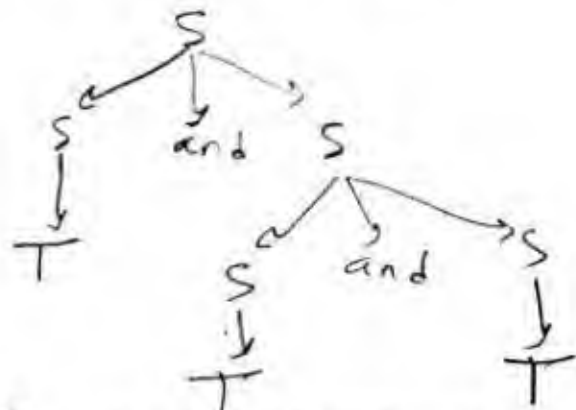
$\Rightarrow T \text{ and } T \text{ and } T$

\hookrightarrow right most

(derivations) يوجد بخاصة لا كثيرة لا

ليس (2-large tree) لم يتبع

d) (Precedence) إلى أن أتقن الأول



$T \text{ and } (T \text{ and } T)$ هذا الشكل

5

10

$S \rightarrow S \text{ and } S \mid S \text{ or } S \mid \text{true}$

$\rightarrow \text{true and true or true}$

a) b)



جواب اول و دوم

c) $S \rightarrow S \text{ or } S \mid L$

$L \rightarrow \text{true and } L \mid \text{true}$

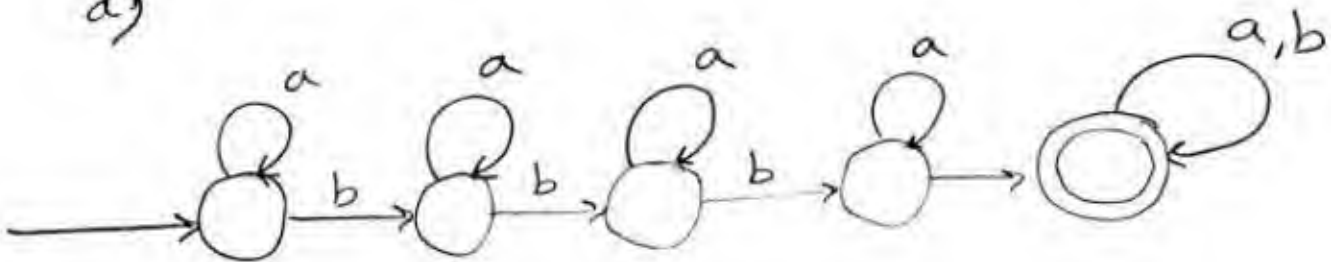
(and) استنتاجی است

(or) استنتاجی است

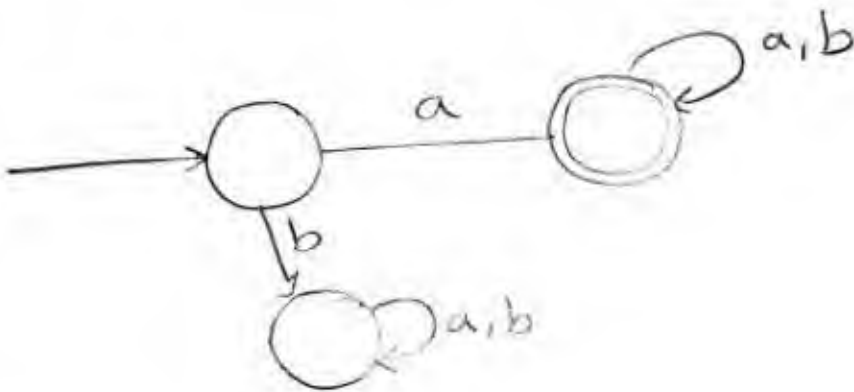


Quiz Sol

a)

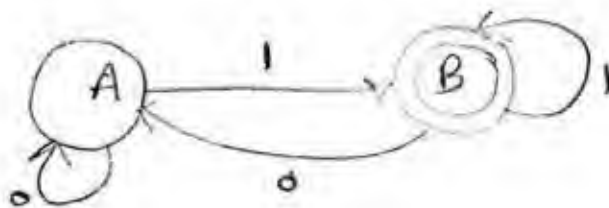


b)



2

a)



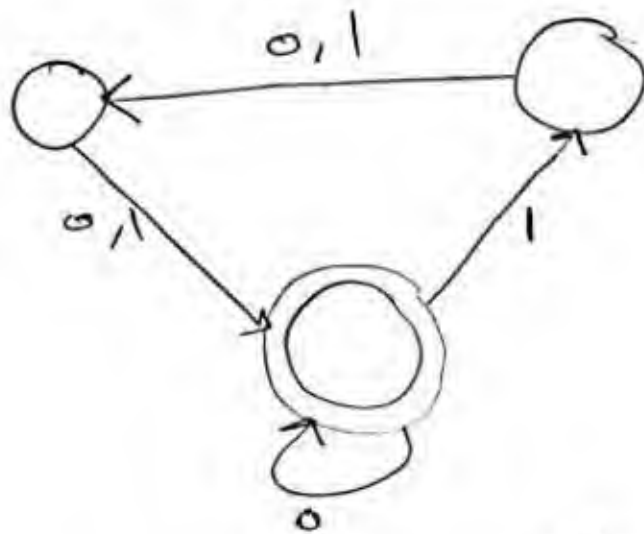
Solutions

① $(0/1)^*1$

② $0^*1(1/0^*1)^*$

②

b)



$$(0+1)(0/1(0+1)(0+1))^*$$

(b)